Project Scientist - Process Modelling

Department: Strathclyde Institute of Pharmacy and Biomedical Sciences (www.strath.ac.uk/sipbs/)
Faculty: Faculty of Science (www.strath.ac.uk/science/)
Staff Category: Technical Services
Reports To: Principle investigator
Salary Range: £32,817 - £40,322
FTE: 1 (35 hours/week)
Closing Date: Sunday, 13 December 2020
Reference No: 316897
Grade: 7
Contract Type: Fixed Term (12 months)

Job Advert

Applications are invited for a Project Scientist to join the EPSRC Continuous Manufacturing and Advanced Crystallisation Future Manufacturing Research Hub (CMAC; www.cmac.ac.uk) at the University of Strathclyde. CMAC is a large dynamic Centre located across 7 UK universities with the physical hub located at the University of Strathclyde. The post holder will have a background in chemical or mechanical engineering, physics, chemistry, mathematics, computational science or other related discipline. Work based experience of process modelling packages and process control programming related to pharmaceutical unit operations and/or pharmaceutics would be advantageous.

You will be a capable process modeller with the ability to implement existing models from literature and partners in a range of platforms and develop new physical, mechanistic and semi-empirical models to describe powder-processing operations (in the current programme, the focus will be in the area of continuous direct compression of pharmaceuticals). The successful candidate will contribute significantly to the development of a modelling platform and control infrastructure for pharmaceutical applications. Additionally, you will utilise experimental data from a range of sources for development of predictive digital design capabilities.

You will have excellent written and verbal skills with the ability to demonstrate prioritisation and scheduling of your own workload. Candidates must have strong problem solving abilities, demonstrating innovation, creativity in dealing with challenges and excellent team working skills.

Job Description

Brief Outline of Job:
To provide support for EPSRC CMAC Future Manufacturing Research Hub. You will work within a larger team to develop a platform for the predictive modelling and control of pharmaceutical processes. You will develop and implement models into a range of programming platforms. You will contribute to the development of modelling packages in order to generate a predictive digital twin of the relevant unit operations and material transformations. You will report to the project technical lead and liaise with program partners (both academic and industrial) to execute the given research programs. This is initially a 12-month post with potential to extend within the longer 7-year program.

Main Activities/Responsibilities:
1. As part of the collaborative R&D projects within the EPSRC CMAC HUB, develop solutions for modelling continuous direct compression processing to ensure progress against the aims of the projects.
2. Work with the PI, Senior Research Fellow and others members of the project team and report progress on modelling activities on a regular basis.
3. Plan and manage own workload, with guidance from colleagues as required.
4. Support project goals, including determining appropriate modelling methods and contributing to the development of new unit operation models.

5. Write reports on progress and finding on modelling work, individually or in collaboration with colleagues, and disseminate results as appropriate to the discipline by, for example, presentations at project and CMAC events.

6. Participate in project partner I networks to share information and ideas, inform the direction of project objectives and to identify areas for further improvement.

7. Collaborate with colleagues to ensure that advances made within the post-holders project inform the EPSRC HUB research and training effort.

8. Collaborate with colleagues on the development of knowledge exchange activities by, for example, participating in workshops, project meetings and partner meetings to strengthen links with industry based project partners.

9. Develop and implement process models for secondary pharmaceutical unit operations and apply to process plant trials in support of the project aims.

10. Engage in continuous professional development.

**Person Specification**

**Educational and/or Professional Qualifications**

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

**E1** HND level qualification in a relevant discipline plus work based experience in a similar role or equivalent in (chemical/mechanical engineering, physics, chemistry, computational sciences or mathematics)

**D1** Degree level qualification in a relevant discipline (e.g. chemical/mechanical engineering, physics, chemistry, computational sciences or mathematics)

**D2** PhD or equivalent experience in relevant area

**Experience**

**E2** Experience in modelling of unit operations/flowsheets preferably with powder processes

**E3** Experience in one or more of the following platforms: Aspen custom modeller, gProms, MATLAB, python, LabView, PharmaMV, Comsol multiphysics, Ansys Fluent

**Job Related Skills and Achievements**

**D3** Knowledge and experience of pharmaceutical processes

**D4** Experience of the deployment of models for use by others

**Personal Attributes**

**E5** Excellent written and oral communication skills

**E6** Demonstrable evidence of ability in presentation of outputs

**E7** Highly focussed on core objective and target driven with the ability to work to tight deadlines and demonstrate prioritisation of work load

**E8** Able to understand and interpret queries from a broad range of sources including researchers, staff and external collaborators

**E9** Proactive and able to use initiative

**Other Relevant Factors**

**E10** Ability to immediately start and provide independent modelling support with minimal supervision

**Application Procedure**

Applicants are required to complete an application form including the name of three referees who will be contacted before interview without further permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.
Other Information

Further information on the application process and working at Strathclyde can be found on our website (http://www.strath.ac.uk/hr/workforus).

Informal enquiries about the post can be directed to John Robertson, Senior Research Associate (j.robertson@strath.ac.uk).

Conditions of Employment
Conditions of employment relating to the Technical Services staff category can be found at: Conditions of Employment.

Rewards and Benefits
Our staff have access to a wide range of outstanding benefits that include financial rewards, family friendly and wellbeing benefits and career development opportunities, details of which can be found here.

Probation
Where applicable, the successful applicant will be required to serve a 9 month probationary period.

Pension
The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from Payroll and Pensions.

Relocation
Where applicable, the University offers a relocation package to support new employees who meet the eligibility criteria. The relocation package is offered as a contribution towards costs incurred, and is designed to be flexible, allowing staff to use the financial support available in the way that will be most helpful to them. Further details are outlined in the Relocation Policy.

Interviews
Formal interviews for this post will be advised in due course.

Equality and Diversity
We value diversity and welcome applications from all sections of the community.

The University currently holds a Bronze Athena SWAN award, recognising our commitment to advancing women's careers in science, technology, engineering, maths and medicine (STEMM) employment in academia.

University Values
The University's Values capture what we're all about: who we are, what we believe in and what we stand for. Our Values have been derived from how we act and how we expect to be treated as part of Strathclyde.
Conditions of Employment
Technical Services Staff Grades 6 to 8

1. GENERAL CONDITIONS
Members of staff are subject to the Charter and Statutes and the Ordinances and Regulations of the University, published in the Calendar, and to any amendments or additions thereto approved by the University Court and, in the case of the Charter and Statutes, the Privy Council. Staff are also expected to familiarise themselves with, and adhere to, general University policies and procedures, as published on University web pages.

The University Court recognises UNITE as the sole body with which it will negotiate and consult on all collective issues concerned with the terms and conditions of employment of Technical Services staff. Such terms and conditions may be varied by the University Court after negotiation and consultation with UNITE.

Each member of staff is responsible for the proper performance of allocated duties to the person or persons specified in the member of staff’s letter of appointment and any accompanying papers. Members of staff may not accept outside paid work including personal consultancies without the permission of the University, which will not be unreasonably withheld.

The University is committed to ensuring that its business is conducted in an open and transparent manner and will take all appropriate steps to address risks of bribery or corruption. Members of staff are required at all times to act honestly and with integrity and to safeguard the resources for which they are responsible. The University has in place a robust Public Interest Disclosure (Whistleblowing) Policy to enable concerns to be brought to its attention. This is available at www.strath.ac.uk/publicinterestdisclosure. Other relevant policies, e.g. Fraud Prevention and Conflicts of Interests, can also be found on the University’s website.

Any member of staff may at any time be exposed to commercially sensitive information, information related to potentially valuable intellectual property or information which may otherwise be of a confidential nature. This information, which could be found anywhere in the University, may be written or disclosed orally, can include information of a commercial or technical nature, and may be owned by the University or by third parties. The University requires all employees to keep any such information confidential in the first instance and not disclose, publish or otherwise disseminate it without prior consent of the University. Such confidentiality obligations are commonplace and in the commercial interests of the University. When in doubt advice should always be sought from Research and Knowledge Exchange Services prior to disclosure.

The University operates probationary periods for new staff, the duration of which will be specified in individual letters of appointment. The normal probation period for posts in this staff category is 9 months for grades 6 and 7 and 12 months for grade 8. Further guidance on probationary procedures is published at http://www.strath.ac.uk/staff/policies/hr/.

Further information on the terms and conditions specified in this document and other staffing policies and procedures can also be found at www.strath.ac.uk/hr.

2. SALARY
Appointments are made at an appropriate salary point on the University’s grading structure, with initial placing determined according to qualifications and experience. Increments are paid to staff on 1 August each year, when the employee has a minimum of 6 full months of service at the appointed grade, allowing progression to the next point on the salary scale until the top guaranteed point of the scale is reached.

Arrangements in relation to overtime, additional hours, non-standards and on-call working are published at www.strath.ac.uk/staff/policies/hr.

Salaries are paid directly to staff members nominated bank account, normally on the second last working day of the month.

3. HOURS OF WORK
The normal working week is 35 hours. Unless otherwise indicated in an individual’s letter of appointment, the normal hours are 9:00am to 5:00pm Monday to Friday with a one hour lunch break. Certain members of staff may be required to work some hours outwith this normal pattern and this should be agreed locally. Nonetheless, operational requirements vary significantly across the University and therefore, where local circumstances dictate, reasonable variation may be adopted dependant upon operational needs. In such situations your Head of Department/School/equivalent will discuss with you the alternative arrangements that will apply.

Overtime rates do not apply to staff grades 6 and above. Where a Head of Department/School/equivalent requests additional work, above the standard working week to meet the particular requirements of the Department, equivalent time off in lieu may be granted by prior agreement.

4. HOLIDAYS
Annual leave entitlement is 31 days per year to be taken by agreement with the line manager. For staff members working on a part-time basis, holidays will be calculated on a pro-rata basis.

In addition to annual leave there is an entitlement to eleven public holidays per year which should be taken on days that the University is closed for this purpose. The University presently closes for four additional days over the Christmas and New Year period. These additional days count against the annual leave entitlement.

For staff members working on a part-time basis, public holiday entitlement will be calculated on a pro-rata basis.

Annual leave and public holiday entitlements should be taken in the leave year to which they relate. Up to five days leave can be carried forward into the new leave year subject to line management agreement. In exceptional circumstances, Heads of Department/School/equivalent may approve carry forward of accrued annual leave in excess of five days.

The University’s expectation is that staff take all accrued holidays prior to their termination date. If staff have exceeded their entitlement the University will deduct an equivalent number of days pay from final salary payments.
5. SICKNESS ABSENCE

During any period of absence through illness or injury provided the appropriate notification and certification procedures have been followed the University will pay a member of staff (having taken account of the aggregate of all periods of absence due to illness during the twelve months immediately preceding the first day of the current absence) as follows:

<table>
<thead>
<tr>
<th>Period of Continuous Employment at start of absence from work</th>
<th>Full Pay</th>
<th>Half Pay</th>
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<tbody>
<tr>
<td>Less than 1 year</td>
<td>1 month</td>
<td>1 month</td>
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<tr>
<td>1 year but less than 2 years</td>
<td>2 months</td>
<td>2 months</td>
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<tr>
<td>2 years but less than 3 years</td>
<td>4 months</td>
<td>4 months</td>
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<tr>
<td>3 years but less than 5 years</td>
<td>5 months</td>
<td>5 months</td>
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<tr>
<td>5 years or more</td>
<td>6 months</td>
<td>6 months</td>
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In order to manage the University’s sick pay scheme the University requires to maintain sickness absence records on individual members of staff. When making payments after the expiry of statutory sick pay the University will deduct an amount equivalent to any benefit normally payable by the Department of Work and Pensions. For full details on the general University policy in this area please refer to the Sickness Absence Management Policy at www.strath.ac.uk/staff/policies/what.

6. PENSIONS

If you are under age 75 at the date your appointment commences you will automatically become a member of the pension scheme operated by the University – the Universities Superannuation Scheme (USS). You will be admitted to the career revalued benefits scheme called the USS Retirement Income Builder, the contribution rate that currently applies is 9.6% of pensionable salary. A threshold applies to the maximum salary that counts towards the USS Retirement Income Builder. From 1 April 2020, the threshold is £59,585.72 per year. Contributions based on salary above the monthly equivalent rate of the threshold are paid to the defined contribution section of the scheme called the USS Investment Builder. Information regarding USS can be found in the scheme booklet located on the website: https://www.uss.co.uk/-/media/Project/USSMainSite/Files/For_members/Guides/Your_guide_to_Universities_Superannuation_Scheme.pdf. The scheme booklet is called ‘Your Guide to the Universities Superannuation Scheme’.

The exception to automatic membership of the pension scheme applies if your post is located out with the UK in an EU member state. If this is the case membership of USS is not available to you.

The University operates a salary exchange arrangement, Pensions Plus, for members of the USS. Pensions Plus enables pension contributions to be made in a manner so that both employees and the University can benefit from available National Insurance Contribution savings. You will be automatically included in Pensions Plus, provided it does not adversely affect your take-home pay or your ability to claim certain state benefits. If your earnings fall below the Pension Plus pay protection limit you will be opted out of Pension Plus. This will not affect your membership of the USS.

New members of staff may opt out of USS within three months of taking up appointment and will then be treated as if they had never been a member of the scheme. After three months members of staff who wish to withdraw from USS during their employment will be required to give a minimum of 28 days’ notice in writing to the University. Any member of staff who wishes to opt out should contact the Pensions Section, Finance, in the first instance (pensions@strath.ac.uk). Please note that if you are a member of Pensions Plus and withdraw from USS with less than two years of membership, or cease employment with the University and have less than two years of USS membership, the option of a refund of pension contributions will not be available to you. Instead, USS must provide you with a pension benefit that is payable from your Normal Pension Age. Regardless of whether you participate in Pensions Plus, if you are a member of the pension scheme for two years or more you are not entitled to a refund of pension contributions on leaving the scheme, you will be entitled to a pension benefit.

The University reserves the right to alter or withdraw Pensions Plus as it sees fit or as required to comply with legislative changes. Withdrawal or amendment of Pensions Plus will not affect your membership of USS. If you do not wish to participate in Pensions Plus but wish to remain in the pension scheme please contact the Pensions Team who will provide you with a non-participation form.

Information regarding pension scheme membership can be found on the Pensions pages of the University’s website. Full information regarding USS can be found on the USS website – www.uss.co.uk

7. PLACE OF WORK AND RESIDENCE

Members of staff will be based on the John Anderson Campus, unless otherwise stated in the letter of appointment. The Department/School in which the post is initially placed will be specified in the letter of appointment although there will be an expectation to work at such other places as required in the course of employment.

If the need arises for members of staff to work outside the UK for a period (or periods) of more than one month then such arrangements will be subject to mutual agreement. Members of staff would then be provided with a statement in advance setting out the terms covering such periods of employment.

The University does not normally place specific restrictions upon the place of residence of members of staff. All staff are, however, expected to reside in a location which is compatible with the satisfactory fulfilment of all the duties associated with their appointment.

8. DISCIPLINARY AND GRIEVANCE PROCEDURES

Further information on the University’s disciplinary and grievance procedure can also be found at www.strath.ac.uk/policies/what or on request from Human Resources.

9. NOTICE AND TERMINATION

The employment of a member of staff is terminable by at least 3 months’ notice, in writing, on either side, except during the probationary period when notice is one month. If notice is being given by a member of staff earlier release may be granted if this can be arranged without detriment to the work of the department or area. If the appointment is for a fixed term period it will expire at the end of the period without the necessity for notice. Fixed term contracts may be terminated by either party short of the expiry date by the serving of one month’s notice in writing. The University is not obliged to continue a fixed term appointment beyond the specified employment period.

Revised April 2020